

**Forest Practices Biomass Work-Group
MASTER OUTCOME SUMMARY
June 8, 2012**

DEFINITIONS

Topic: Definitions (Biomass Only)
1. There is currently no definition of "Biomass" in Washington's Forest Practices Rules.
Outcome/Recommendation
<p>The Forest Practices Biomass Work-group, by consensus, proposes that the following definition of "forest biomass" be added to the Forest Practices Rules:</p> <p>"Forest Biomass" means material from trees, and woody plants that are by-products of forest management, ecosystem restoration, or hazardous fuel reduction treatments on forest land. Although stumps are a by-product <u>of these activities</u>, only those removed for the purpose of road and landing construction, forest health <u>treatments</u>, or conversion <u>activities</u> to non forest land <u>may</u> qualify as forest biomass.</p> <p>* "Conversion activities" is defined in rule (WAC 222-16-010) as "activities associated with conversions of forest land to land uses other than commercial timber operation. These activities may be occurring during or after timber harvest on forest land. They may include but are not limited to the following:</p> <ul style="list-style-type: none"> • Preparation for, or installation of, utilities on the forest practices activity site. The development or maintenance of existing rights of way providing utilities exclusively for other ownerships shall not be considered conversions of forest land (see WAC <u>222-20-010(5)</u>). • Any of, or any combination of, the following activities in preparation for non-forestry use of the land: Grading, filling, or stump removal. • Preparation for, or construction of, any structure requiring local government approval. • Construction of, or improvement of, roads to a standard greater than needed to conduct forest practices activities. • Clearing for, or expansion of, rock pits for non-forest practices uses or developing surface mines."

Topic: Definitions (Timber issues that affect biomass)
<p>Evaluate the need to define and/or the existing definitions of:</p> <ul style="list-style-type: none"> -Slash -Salvage -Debris -Hazard -Harvest -Risk -Consequence
Outcome/Recommendation
<p>The Forest Practices Biomass Work-group, by consensus, determined the following:</p> <ol style="list-style-type: none"> 1. There is no need to define the word "harvest." The word "removal" is used throughout the FP rules and is sufficient (with the proposed definition of "forest biomass") to capture the intent. 2. There is no need to modify the definitions of "slash," "harvest" or "salvage." If the proposed definition of "forest biomass" is adopted, it will provide the clarification that revisions to these definitions would have sought to achieve. <p>The Forest Practices Biomass Work-group, by consensus, proposes that the following revision be made to the definition of "Forest Practices" in the Forest Practices Rules:</p> <p>"Forest practice" means any activity conducted on or directly pertaining to forest land and relating to the growing, and removal through harvesting or processing of timber or forest biomass, including but not limited to:</p> <ul style="list-style-type: none"> Road and trail construction; Harvesting, final and intermediate; Precommercial thinning; Reforestation; Fertilization; Prevention and suppression of diseases and insects;

Salvage of trees; and
Brush control.

"Forest practice" shall not include: Forest species seed orchard operations and intensive forest nursery operations; or preparatory work such as tree marking, surveying and road flagging; or removal or harvest of incidental vegetation from forest lands such as berries, ferns, greenery, mistletoe, herbs, mushrooms, and other products which cannot normally be expected to result in damage to forest soils, timber or public resources.

The Forest Practices Biomass Work-group determined to put a placeholder on the need to define "hazard," "risk," and "consequence." The group would like to revisit this during the soil nutrients discussion.

Topic: Definitions (Outside existing FP jurisdiction)

Sustainability. A definition of sustainability is not currently contained in the Forest Practices Rules.

Ecologically sustainable forestry. A definition of ecologically sustainable forestry is not currently contained in the Forest Practices Rules.

Biological Diversity. A definition of biological diversity is not currently contained in the Forest Practices Rules.

RETENTION LEVELS

Topic: Retention Levels (Biomass Only)

1. How much biomass should be left on site to ensure that forest resources/forest function is maintained?
2. Is the "bottom line" of retention, currently in the FP Rules, sufficient under the possibility of a market for more product that would have otherwise been left behind?
3. Rules lack retention targets for fine woody debris.
4. Is there a need for slash retention rules/BMP's?
5. Should special areas where ground wood is particularly important be identified?
6. Should the fact that stumps cannot be removed be clarified in light of an emerging biomass sector?

Outcome/Recommendation

#1. The group has evaluated the issue, based on today's practices and the information provided in the UW supply study (DNR, 2012), we don't see a need for rules or guidance at this point. Group would recommend that the topic be revisited as technology changes, biomass value increases, and the bioenergy sector grows. This re-evaluation should take place no later than 2016.

#2. No consensus at this point. The group will evaluate other specific areas to determine if there are exceptions, nuances, etc. that are more specific to this need.

Topic: Retention Levels (Timber Only)

1. WRT/GRT requirements haven't been updated in over 20 years. Do these need to be modernized?

Outcome/Recommendation

The Forest Practices Biomass Work-group, by consensus, would like to recommend that the Forest Practices Board prioritize the identification of funding to complete the Landscape Level Wildlife Assessment models. This will provide the necessary information to determine whether existing WRT/GRT requirements are sufficient or if a rule change is necessary to ensure wildlife habitat is sufficiently provided for in the Forest Practices Rules.

Topic: Retention Levels (Outside existing FP jurisdiction)

1. Is soil quality within the jurisdiction of the Forest Practices Rules to regulate?
2. Revisit: How much biomass should be left on site to ensure soil quality is maintained? How much slash needs to be left for wildlife and soil quality, to control and reduce surface run-off, maintain ecosystem functionality (harvest cycle is a contributor = potential metric), and contribute to reforestation efficacy? (from flag list)

Outcome/Recommendation

Key Question: Is the pre-existing (material on-site prior and after a timber harvest) + the 30% breakage (per UW study) sufficient to maintain soil productivity?

Dick Miller will:

1. Bring information related to the volume of Nitrogen in different parts of the trees.
2. Diagram of site index and Nitrogen in soil.
3. Provide the group with a copy of the study he worked on related to Nitrogen in soils in E. WA. (Wenatchee Forest)

This topic will be revisited again after the E. WA field trip.

Topic: Retention Levels (Timber Only)

1. How is sufficient large woody debris maintained in unbuffered Type Ns and Np streams? (Water Quality, Riparian Zones/Unstable Slopes, Water Infiltration)

Outcome/Recommendation

The Forest Practices Biomass Work-group, by consensus, determined that no action is necessary to address this issue that was raised. Forest Practices Rules already in place are sufficient to protect water quality.

SLOPE

Topic: Slope (Biomass Only)

What is the percent slope threshold at which biomass should not be collected due to risks collection with pose on soil erosion, water quality, etc.?

Outcome/Recommendation

The Forest Practices Biomass Work-group, by consensus, proposes the following rule revision:

WAC 222-30-020 Harvest unit planning and design. (1) Logging systems, including forest biomass removal operations, must be appropriate for the terrain, soils, and timber type so that yarding and skidding can be economically accomplished and achieve ecological goals of the rules.

Consensus is that the intent of this revision is captured and Marc will look at the large impacts this revision may have on the rules as a whole to ensure there are no unintended consequences.

SOIL HEALTH

Topic: Soil Health (Biomass Only)

On sensitive soils, should biomass collection should be limited to the landings during certain seasons (allow removal during dry soil conditions or prohibit a return to the site)?

Outcome/Recommendation

The group identified three aspects to this issue:

1. Physical. A definition for “erodible soils” exists and is used for FPA conditioning.
2. Nutrients. Questions remain, specific to lower site classes, about whether enough organic matter remains on-site to ensure soil nutrients are provided for.

A placeholder has been requested with the following concepts/ideas on the table:

1. A biomass “check-list” for DNR FP staff to utilize when evaluating a biomass removal FPA.
2. DNR should hire a dedicated biomass FTE to work in FP.

The group would like the following:

1. Watch an FPA being screened.
2. Look over FPA, FPA Checklist, FPA’s that have indicated biomass collection as part of the operation. – DONE at 3.30.12 meeting.

Per 3.30.12 Meeting

1. Question: It is the intent of the FP Bioamss work-group that the 30% biomass (that results from breakage, etc.) and the volume that is there pre & post biomass harvest is left on the harvest unit. Is there a place in rule that we can state that this is the intent? Should this intent be included in a potential retention provision?

2. Marc Engel indicated that a new FP Application with biomass related revisions is expected in the next several weeks.

It was suggested that in the “Overview” box on the application an option to check “Biomass” or “Other” be added to allow a reader to see, on first glance, that biomass collection is part of the FPA.

TIMING

Topic: Timing (Timber issues that affect biomass)
<ol style="list-style-type: none"> 1. Will road abandonment and slash disposal requirements interfere with the need for forest biomass to cure over a period of 6-18 months? 2. Biomass harvest could challenge DNR’s ability to monitor for compliance with FP rules.
Outcome/Recommendation
<ol style="list-style-type: none"> 1. The Forest Practices Biomass Work-group, by consensus, determined that no rule change or BMP’s were needed to address the road abandonment and timing issue. 2. The Forest Practices Biomass Work-group, by consensus, would like to recommend that, when biomass is being harvested after the timber harvest is complete (when the biomass has had time to cure on site for a period of time), to condition the FPA with the 48 hour notification requirement. FP staff present at the meeting indicated that this would already occur, whether biomass or timber was being harvested, when the “triggers” for the 48-hour notification rule were pulled. The group would like to formally request that FP foresters (perhaps at TFW meetings) be reminded of this as it applied to the removal of forest biomass.

Topic: Timing (State Lands Only)
<ol style="list-style-type: none"> 1. State timber contracts require that the purchaser complete road abandonment work. How does this interplay with a biomass collector coming back to the site. Do they need to re-abandon the road again?
Outcome/Recommendation
The Forest Practices Biomass Work-group, by consensus, determined that no action is necessary to address this issue that was raised. The work-group appreciated the high-priority that RMAP’s are given to DNR and appreciates that the dialogue remains open with regard to DNR’s progress on developing contracts (short and long term) for forest biomass from state lands.

CARBON STORAGE

Topic: Carbon Storage (Outside existing FP jurisdiction)
Should carbon storage be addressed by FP rules? It is not currently within our statutory authority.
Outcome/Recommendation
The Forest Practices Biomass Work-group, by consensus, determined that no action is necessary to address this issue that was raised. The workgroup determined that it is beyond the scope of this committee’s objectives and, if addressed, would need to be done so in a different forum.

OTHER ISSUES

Topic: Other Issues (Outside existing FP jurisdiction)
<ol style="list-style-type: none"> 1. Reforestation species: will species shift for biomass production? Mostly in outer limits of RMZ. NOTE: This is ‘thin ice’ with regard to telling landowners what to plant. (Silviculture) 2. Interim Step: Biomass industry infrastructure in eastern Washington is so immature it is not possible to address what constitutes appropriate biomass harvest on the Eastside of the Cascades. <ol style="list-style-type: none"> a. Need a field trip. Spring 2012. Public and private lands; pre and post- harvest. (Disturbance) 3. Aquatics emphasis in rules; not a lot that relates to uplands with regard to disturbances. Gaps in rules related to uplands vs. aquatics. (Disturbance) 4. Forest Health Bill excluded riparian areas because CMER was supposed to be looking at that. Not in the

<p>rules. (Disturbance)</p> <ol style="list-style-type: none"> Dynamic forest products market that defines end use of all products. (Disturbance) We can't currently determine the efficacy of the existing FP rules with regard to dead wood and slash disposal. (Dead wood, slash disposal, carbon storage) L&I rules conflict with replanting and the ability to leave snags. Leaving snags is important for wildlife habitat. Clumping is one potential solution. (Wildlife, Biodiversity, and Cultural Resources) Site prep information where rules discuss harvest, salvage, etc. (Wildlife, Biodiversity, and Cultural Resources) Will shrub layer be collected in the future for utilization as biomass? (Wildlife, Biodiversity, and Cultural Resources)
Outcome/Recommendation
<p>Topic #1: The Forest Practices Biomass Work-group, by consensus, determined that no action was needed. This would be considered a Class IV Special activity (conversion to agroforestry).</p> <p>Topic #2: This is on-going. The group determined this will be an 'optional' meeting.</p> <p>Topic #3: This issue is tabled until after the E. WA field trip.</p> <p>Topic #4: This issue is tabled until after the E. WA field trip.</p> <p>Topic #5: The Forest Practices Biomass Work-group, by consensus, determined that no action was needed, this was a non-issue anymore.</p> <p>Topic #6: The Forest Practices Biomass Work-group, by consensus, determined that no action was needed, this was a non-issue.</p> <p>Topic #7: The Forest Practices Biomass Work-group, by consensus, determined that no action was needed, this issue is not addressable. It is an issue that, if it were to change, would need to come from L&I.</p> <p>Topic #8: The Forest Practices Biomass Work-group, by consensus, determined that no action was needed, this issue was addressed through the discussions of the workgroup.</p> <p>Topic #9: The Forest Practices Biomass Work-group, by consensus, determined that no action was needed, this issue was addressed through the discussions of the workgroup.</p>

Topic: Ecosystem Functionality
<ol style="list-style-type: none"> What is the possibility for the Forest Practices Rules to apply an ecosystem functionality approach to rules, in general. Increasing the scale of management – a crosswalk of conservation measures under existing HCP.
Outcome/Recommendation
<p>The Forest Practices Biomass Work-group, by consensus, determined that no consensus on this topic could be reached. Members of the group had two perspectives:</p> <ol style="list-style-type: none"> Position #1: This is not an issue for the FP Board. If it determined that this should be an issue, it should be determined by a body with more authority than the FPB (ex. Washington State Legislature). Position #2: A policy statement needs to be added to either the FPR or a Board Manual that includes: <ul style="list-style-type: none"> -Timber harvest shall be planned in the context of the larger landscape in which it is located across the full harvest cycle, so that biological diversity and ecosystem integrity are maintained and adverse cumulative impacts on public resources and soil productivity are minimized. -An adaptive process moving towards sustainability is the ultimate outcome. -Statement should include concepts outlined by the Conservation Caucus text provided in the document prepared for the 3.30.meeting.

Comprehensive List of “Flagged” Items

Topic: Definitions

Silviculture

Revisit terms contained in specific treatments (the entire definitions section of the WACs should be revisited as they pertain to biomass harvest).

Disturbance

Define subset of materials for which biomass is possible = all types of material are part of the discussion. Goes back to the need for a clear definition of biomass.

- a. It’s currently pre-mature to define it; this process could help.
Example: Slash may be biomass, thinning may be something else.

“Slash” is 3 cubic feet or bigger in the rule. Does this need to be revised?

Dead wood, Slash Disposal, and Cultural Resources

Does course woody debris include stumps?

- a. Need to look into definitions section.
- b. Might need to clarify that stumps can’t be taken in a guidance document. Do stumps count toward contributing to ecological requirements?

Should “salvage” be added to this section (after harvesting)?

Bigger issue: Definitional evaluation of “salvage” and “harvest” to avoid unintentional harvest.

California’s Forest Practices Rules identify “biological diversity” as a consideration of forest and watershed planning. This is different from Washington’s rules and points to a Watershed analysis approach to biomass collection.

Will SEPA be triggered only if it’s a “harvest” and not a “salvage?”

Is biomass a harvest or a salvage? Both because it includes harvest activities that are FP activities.

(For Definition) Ecologically sustainable forestry “perpetuating ecosystem integrity while continuing to provide wood and non-wood values.”

Topic: Timing

Soil Productivity

For state timber sales, major obstacle is the timber contract requirement to abandon roads, a return by the biomass collector requires the roads to re-built and then re-abandoned again.

Roads

Timing of road abandonment is key. Don’t want to tear out a road after timber harvest is complete if biomass harvest is planned. How can roads be left open after timber contracts expire? DNR state lands issue mostly with regards to long term biomass contracts.

Biomass removal may require more roads slated for abandonment to remain open longer: what burden does that put on DNR state lands managers to monitor? Staffing issues have been better for roads than other issues. How will staffing needs be met if roads are open longer? Work-load issue. This would be a timing issue for the forest practices RMAP program, the number and miles of road abandonment will remain the same.

Abandonment: there is a need to coordinate RMAP plan/work with biomass harvest.

Dead wood, slash disposal, carbon storage

Rule addressing landing clean-up directs slash to be removed within 60 days or as soon thereafter as practical. Could this pose an issue for biomass collection? WAC 222-30-080

- a. If plans for removal are described in the Forest Practices application, intent of this requirement will be met. Must be explicit in application (can't negatively affect resources, roads might be an issue).
 - i. Need to cure biomass is not an excuse to hold off reforestation and/or risk resource damage.
- b. WAC 222-16-010 "Completion of Harvest." What happens when timber contractor is independent of biomass contractor? How do we address situations where two kinds of harvests are decoupled?
 - i. Possibly not enough time in the 6-month window.

Topic: Retention Levels

Soil Productivity

How much biomass should be left on site to ensure soil quality is maintained? How much slash needs to be left for wildlife and soil quality, to control and reduce surface run-off, maintain ecosystem functionality (harvest cycle is a contributor = potential metric), and contribute to reforestation efficacy?

Piece size is missing from the rules to define both ends of the size spectrum for "biomass" collection. Slash is defined as "pieces of woody material containing more than 3 cubic feet resulting from forest activities" and debris is defined as "woody vegetative residue less than 3 cubic feet in size resulting from forest practices activities."

Silviculture

How much biomass should be left on site to ensure soil quality is maintained? How much slash needs to be left for wildlife and soil quality, to control and reduce surface run-off, maintain ecosystem functionality (harvest cycle is a contributor = potential metric), and contribute to reforestation efficacy?

Dead Wood, Slash Disposal, Carbon Storage

Is our group goal/intent to create broad goals like other states or more specific goals (site index) with regard to dead/down wood and retention levels (volumes)?

WRT/GRT requirements were last updated in 1992, need to determine if they need to be updated.

Rules lack retention targets for fine woody debris, need to determine if they need to be updated to include fine woody debris.

Water Quality, Riparian Zones/Unstable Slopes, Water Infiltration

How do we approach the issue of how much biomass needs to be left on site, in general: performance/prescriptive based or qualitative?

Methods for regulatory surrogate for identifying/measuring amount left on site. % ground cover, minimum bare soil.

Wildlife, Biodiversity, and Cultural Resources

Regarding retention levels: a) Retain a range of size and age classes of dead wood. b) Ensure that some large trees or snags are retained. c) Meet dead wood requirements for larger species in areas where the

emphasis is not on intensive fiber production.

Avoid damaging existing downed woody debris, especially large (18+ inches) hollow or rotten logs and rotten stumps during harvesting operations (including tree falling, skidding, and road and skid trail layout). *Special focus on decayed logs.

No rules exist for slash retention/protection for duff/litter, understory shrubs/herbs, or non-merchantable trees.

Topic: Slope

Water Quality, Riparian Zones/Unstable Slopes, Water Infiltration

WAC 222-30-070. Slope Restrictions

- a. 30% slope limit is SOP, but not specifically restricted in WAC. This is due to equipment restrictions and depends on the length of the slope, type of machinery used. 50% slope is more of a reasonable limit with site, seasonal, and equipment specifics. Operator skills also affect limits. Must meet performance objectives.
- b. Slopes over certain thresholds have different impacts on hydrology. Do we want to evaluate slopes in a stratified manner based on % slope?
 - i. FP rules already prohibit rutting.
- c. Biomass can't be removed from bounded areas identified as unstable slopes.
 - i. Who determines that an area is "off limits"/unstable slope? Geologist/DNR qualifies the report, experts are needed. Foresters who work in areas can identify unstable slopes. DNR won't approve a FP permit application without approval from geologists.
- d. Retain at least 30% of the fine woody debris on slopes conducive to ground-based harvesting and 50% or more on steeper slopes. (Harrison et al. 2011)
- e. Soils with the highest inherent erodibility contain high proportions of fine sand and silt, low amounts of oil organic matter, and slow permeability... these soils tend to erode easily when disturbed or exposed, especially on long slopes or slopes greater than 10%. (Minnesota BMP)
- f. Why are steepness thresholds so much lower in other states (35-40%) than in WA (65-70%)? Based on experience and vulnerability.

Topic: Ecosystem Functionality

Wildlife, Biodiversity, and Cultural Resources

Can biodiversity be truly applied to FP rules?

Landscape vs. stand scale management. Complete the WDFW model that was started but not finished.

Water Quality, Riparian Zones/Unstable Slopes, Water Infiltration

Integrate parts of discussion into RMZ standards, etc. Look at interaction of effects (vegetation composition, invasives; organic material). How could/does biomass removal impact green recruitment in RMZ, buffered/unbuffered reaches?

No FP Rules for cumulative effects of traditional harvest at the watershed scale.

Topic: Soil Health & Productivity

For biomass harvest on sensitive soils, perhaps it would be best to say that no machinery can go back onto the site to collect; collection must be limited to the landing.

Difference between landing collection and going out onto the unit to collect biomass; difference should be made clear.

Topic: Carbon Storage

Silviculture

Be aware of carbon accounting issues.

Dead wood, slash disposal, carbon storage

If retaining soil carbon based on biomass is equal to keeping more biomass on the ground, the trade-off diminished opportunity for production of renewable fuels and energy.

What is the analytical boundary of this group? Need to stay focused on the FP Act/rules.

There are no FP rules related to carbon storage; group needs to think about whether such rules are necessary.

- a. Group could form a goal. Example: no net loss.
- b. Group could look at whether carbon is being sequestered adequately as a result of meeting other goals already articulated in the FP rules.
- c. What timeframe and scale is appropriate for this inquiry?

Carbon is not covered in the RCW, though it's still important to other elements of ecosystem health – regeneration, wildlife habitat, etc.

Topic :Other Issues

1. Reforestation species: will species shift for biomass production? Mostly in outer limits of RMZ. NOTE: This is 'thin ice' with regard to telling landowners what to plant. (Silviculture)
2. Interim Step: Biomass industry infrastructure in eastern Washington is so immature it is not possible to address what constitutes appropriate biomass harvest on the Eastside of the Cascades.
 - a. Need a field trip. Spring 2012. Public and private lands; pre and post- harvest. (Disturbance)
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7. How is sufficient large woody debris maintained in unbuffered Type Ns and Np streams? (Water Quality, Riparian Zones/Unstable Slopes, Water Infiltration)
8. L&I rules conflict with replanting and the ability to leave snags. Leaving snags is important for wildlife habitat. Clumping is one potential solution. (Wildlife, Biodiversity, and Cultural Resources)
9. Site prep information where rules discuss harvest, salvage, etc. (Wildlife, Biodiversity, and Cultural Resources)
10. Will shrub layer be collected in the future for utilization as biomass? (Wildlife, Biodiversity, and Cultural Resources)